

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-4. (Cancelled)

5. (Currently amended) A method for controlling an air-fuel mixture in an internal combustion engine, comprising:

determining a temperature of a downstream emission control device, said downstream emission control device located following an upstream emission control device;

oxidizing hydrocarbons stored in said downstream emission control device when said temperature of said downstream emission control device is greater than a predetermined temperature by providing an air amount in a location following said upstream emission control device and before said downstream emissions device, where said air amount is provided by an air pump, and wherein said oxidizing hydrocarbons is accomplished by adjusting said air pump to provide a varying amount of air mass to said downstream device to oxidize hydrocarbons without lowering said temperature of said downstream device below a predetermined threshold; and

adjusting the air/fuel ratio in the engine rich of stoichiometry during oxidation of said hydrocarbons.

6. (cancelled)

7. (Currently amended) The method of claim 5 6, wherein ~~said air supply device is an air pump~~ said air pump is activated when said determined temperature is greater than a preselected threshold.

8. (Cancelled)

9. (Currently amended) A system controlling an air-fuel ratio in an internal combustion engine, comprising:

a hydrocarbon trap positioned in an exhaust path downstream of a first emission control device, said first emission control device being located downstream of said engine;

an air supply device positioned downstream of said first emission control device to supply air upstream of said hydrocarbon trap; and

a controller configured to activate said air supply device when temperature of said hydrocarbon trap is greater than a predetermined temperature, thereby, delivering oxygen to said hydrocarbon trap when temperature of said hydrocarbon trap is greater than a said predetermined temperature, said controller further configured to adjust an air/fuel ratio in said engine rich of stoichiometry during said air delivery and to adjust said air supply device to vary an amount of oxygen delivered to said hydrocarbon trap to prevent said temperature of said hydrocarbon trap from falling below a threshold value by pulsing said air supply device.

10. (Original) The system of claim 9, wherein said air supply device is an air pump.

11. (Currently amended) A method for controlling an engine, said engine communicating with a first emission control device, said first emission control device communicating with a second emission control device, said method comprising:

determining a temperature of said second emission control device;

combusting an air-fuel mixture rich of stoichiometry in an engine cylinder to reduce NOx stored in said first emission control device; and

applying oxygen upstream of said second emission control device to oxidize hydrocarbons stored in said second emission control device and hydrocarbons from said combusted rich air-fuel mixture when said determined temperature of said second emission control device is greater than a predetermined temperature, where an amount of said oxygen applied upstream of said second emission control device is provided by a pump, and said amount is varied based on said determined temperature by pulsing said pump.

12-13. (Cancelled)

14. (Previously presented) The method of Claim 5 wherein said air-fuel is adjusted by providing a bias to a desired air-fuel ratio.

15. (Previously presented) The method of Claim 14 wherein said bias is based on an air mass in the intake manifold.

16. (Previously presented) The method of Claim 5 wherein said air amount is increased as engine load increases.

17. (cancelled).

18. (Currently amended) A method for controlling an air-fuel mixture in an internal combustion engine, comprising:
determining a temperature of a downstream emission control device located following a upstream emissions control device;

commencing oxidizing hydrocarbons stored in said downstream device when said temperature of said downstream device is greater than a predetermined temperature by providing a predetermined air mass in a location following said upstream emissions control device and before said downstream emissions device, ~~The method of claim 17~~ wherein said oxidizing hydrocarbons is accomplished by providing a sufficient air mass to said downstream device without lowering the temperature of said downstream device below a predetermined threshold; and adjusting the air-fuel ratio in the engine rich of stoichiometry during oxidation of said hydrocarbons.

19. (Currently amended) The method of Claim 17 18 wherein said air-fuel is adjusted by providing bias to a desired air-fuel ratio.

20. (Previously presented) The method of Claim 19 wherein said bias is based on an air mass in the intake manifold.

21. (Currently amended) The method of Claim 17 18 wherein said predetermined air mass is provided by an air pump.

22. (New) The method of Claim 11 wherein said oxygen is applied to an exhaust gas stream passing through said emission control devices in only one location of said exhaust gas stream.